

REMARKS

Applicant thanks the Examiner for initialing and returning the PTO SB/08 Forms submitted with the Information Disclosure Statement of March 18, 2004, and August 17, 2007.

Applicant respectfully requests that the Examiner acknowledge receipt of *all* priority documents filed March 18, 2004 in the next Office Correspondence.

Applicant respectfully requests that the examiner accept the drawings filed on March 18, 2004 in the next Office Correspondence.

By this Amendment, Applicant has added new claims 12-20 and now claims 1-20 are all the claims pending in the application.

Claim Rejections - 35 U.S.C. § 112

Claims 1 and 9-11 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully traverses this rejection.

The Examiner asserts that “it is unclear how the second area is forecasted and it would not have been clear to one of ordinary skill in the art at the time of the invention.” Applicant respectfully disagrees with the Examiner’s position. Claim 1 recites, in part, “a spread area forecast section for forecasting a second area,” where the second area is “related to the first area with respect to the spread of the disease and in which the disease is supposed to spread in the future”. Further, the “spread area forecast section for forecasting a second area,” is “based on a relationship between the first area and the second area”.

The claim terminology is sufficiently clear and would be understood by one of ordinary skill. The Examiner appears to implicitly suggest that the claims be clarified via descriptions of the exemplary embodiments. However, such limiting descriptors are not a requirement of 35 U.S.C. 112.

Accordingly, Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. 112, second paragraph, because the terminology used in the independent claim is sufficiently clear and the claims meet all requirements of 35 U.S.C. § 112 second paragraph.

Claim Rejections - 35 U.S.C. § 101

Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is allegedly directed to non-statutory subject matter. Applicant respectfully traverses this rejection.

Claim 10

The Examiner asserts:

The claimed invention does not lie within one of the four classes of statutory subject matter. The claimed invention does fall with the judicial exception category of an abstract idea. The invention does not transform an article or physical object, and it does not produce any useful, concrete, and tangible result. As shown by Haggett, there are many ways to predict the geographical spread of a disease (see: at least Figures 1 and 2). The unspecified method of forecasting an area where a disease is supposed to spread in the [forecasted area] does not produce a repeatable and predictable result. Therefore, claim 10 is not allowable subject matter.

Applicant respectfully disagrees with the Examiner's position.

Applicant respectfully submits that the Examiner has misapplied MPEP 2106(IV)(C)(2)(c) "Concrete Result". The proper application of MPEP 2106(IV)(C)(2)(c) pertains to whether the invention produces a "concrete" result and that the process must have a result that can be substantially repeatable. In re Swartz, 232 F.3d 862, 864, 56 USPQ2d 1703, 1704 (Fed. Cir. 2000) (where asserted result produced by the claimed invention is "irreproducible" claim should be rejected under section 101). As it pertains to claim 10, given a particular clinical data set, the "forecasting [of] a second area" would produce a concrete, repeatable, and predictable result. The repeatability or predictability would stem from the source of the information acquisition, via the location of a medical facility or patient address as claimed. Thus, the various area-based

determinations would provide concrete, tangible, and reproducible results. Thus, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 101 rejection. Claim 16 describes a further tangible result more particularly.

Claim Rejections - 35 U.S.C. § 103

Claims 1, 2, 4-6, and 8-11 are rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over McNair (US 2004/0236604), in view of Mault (US 2003/0129578), and in view of Haggett (Prediction and predictability in geographical systems). Applicant respectfully traverses this rejection.

Claim 1

The Examiner correctly concedes that McNair fails to teach, “an incidence rate computing section for computing incidence rate of a disease in each area based on the medical records and the location information of the plurality of patients; and a spread area identification section for identifying a first area, where the disease spreads, based on the incidence rate computed by said incidence rate computing section,” but cites Mault as allegedly curing these deficiencies. Applicant respectfully disagrees with the Examiner’s position.

Mault teaches a plurality of local input units 10a-10n which users enter their physiological conditions and symptoms on in response to questions from a central computer. (See paragraph [0030]). The central computer then analyzes the *user input data* and creates an “analysis of a statistical nature”. (See paragraph [0040]). Thus, Mault bases the statistical analysis on user input data of physiological conditions and symptoms. Accordingly, the user input data of Mault fails to teach or suggest, “computing incidence rate of a disease in each area *based on the medical records*”, where the “medical records” are previously defined in claim 1 as “medical charts including medical records of a plurality of patients diagnosed by a physician at each of the plurality of medical institutions”.

Furthermore, the Examiner asserts:

It would have been obvious to one of ordinary skill in the art to include in the patient information storing system of McNair, the computing of disease incidence and detecting the spread of that disease as taught by Mault because the claimed invention is merely a combination of old elements, and in the combination, each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Applicant respectfully disagrees with the Examiner's position.

Applicant respectfully submits that that one of ordinary skill in the art at the time of the presently-claimed invention would not have been motivated to combine McNair and Mault as suggested by the Examiner because there is no suggestion of motivation for doing so in the references themselves or the knowledge available to one of ordinary skill in the art without resorting to impermissible hindsight. McNair teaches the use of *electronic patient-record data* which includes the results of laboratory tests, the results of other diagnostic studies, prescriptions and other clinician order, clinical notes, and codes for diagnoses and procedures. (See paragraph [0011]). Alternately, Mault teaches that the individual patient answers broad queries from a central computer regarding the health of the patient. For example, the central computer asks, "Do you have a fever?" or "Do you feel nauseous?" (See paragraph [0030]). Thus, Mault teaches the use of a computer provided questionnaire to accumulate data on the health of patients. It is apparent then, that McNair and Mault teach fundamentally different patient data and patient data acquisition. Accordingly, McNair and Mault are inapposite because of the disparity as pointed out above, and the only possible motivation for the Examiner's proposed combination is Applicant's own disclosure, the reliance on which constitutes impermissible hindsight reconstruction under MPEP §2143 (see also *In re Vaeck*, 20 USPQ 1438 (Fed. Cir. 1991)).

The Examiner correctly concedes that McNair fails to teach a spread area forecast section for forecasting a second area, related to the first area with respect to the spread of the disease and in which the disease is supposed to spread in the future, *based on a relationship between the first area and the second area*, but cites Haggett as allegedly curing these deficiencies. Applicant respectfully disagrees with the Examiner's position.

To the extent that Haggett uses a predictive model, it is based on historical data spread over years, if not decades. (See page 12, col. 2, describing a 25 year study). FIG. 2 relied upon by the Examiner, corresponds to a similar gathering of historical data, as analogized to historical (archival) meteorological phenomena. These protracted models simply do not bear any relevance to the real-time daily analysis contemplated by McNair. (See McNair, Abstract). Thus, while the Examiner alleges the function would be the same if combined, this is not true in view of the vastly different time scales (thus functionality) of the statistical study in McNair and that of Haggett.

Furthermore, Haggett specifically teaches that the basic assumption in his local modeling is that the "population *mixes in a random manner* (often referred to as homogeneous mixing)". (See page 10, first paragraph). In other words, Haggett's predictive modeling is independent of the relationship between the first area and the second area. Thus, the "homogeneous mixing" assumption of Haggett is contrary to claim 1 and fails to teach or suggest "a spread area forecast section for forecasting a second area... *based on a relationship* between the first area and the second area".

Accordingly, claims 2-8 should be patentable at least by virtue of their dependencies from claim 1 as well as for their additional recited elements.

Claim 2

Claim 2 recites, in part, “spread area forecast section forecasts the second area based on outbreak history information including the incidence rate of the disease in each of the areas during a plurality of time periods in the past.” The Examiner asserts that “Haggett teaches [these features] using past epidemic behavior (which would include the incidence rates at specific times and in specific areas) to predict the spread of a current epidemic (see: page 17, Discussion section, point 3)”. (See Office Action, Page 5). Applicant disagrees with the Examiner’s position.

The Examiner has misinterpreted page 17, Discussion section, point 3 of Haggett. Haggett teaches the use of past epidemic behavior to establish whether a system of interest shows predictability in its previous lengthy historical trajectory. Thus the past epidemic behavior is used as a check to the predictive models in Haggett and fails to teach or suggest the above recited features of claim 2.

Claim 4

Claim 4 recites, in part “an outbreak forecast information storage section storing thereon the outbreak forecast information”. The Examiner asserts that “McNair teaches storage for the information used in a system that detects outbreaks (see: paragraph 86). Haggett teaches using such information as described by McNair (such as geographic location as pointed out for claim 1) in predicting the spread of a disease.” The Examiner’s assertion, however, fails to teach or suggest “*an outbreak forecast information storage section* storing thereon the outbreak forecast information”. The Examiner’s paraphrase of claim 4, “storage for the information used in a system that detects outbreaks”, is not equivalent to “an outbreak forecast information storage section storing thereon the outbreak forecast information” as recited in claim 4. Furthermore,

paragraph [0086] of McNair merely teaches a database and thus, McNair, Mault, and Haggett alone, or in combination fail to teach these features.

Claim 5

Claim 5 recites, in part “spread area forecast section further forecasts a time period when the disease will spread in the second area *based on the outbreak history information*”. The Examiner asserts that “Haggett teaches using outbreak history to detect the time period of the approach of an epidemic (see: first two paragraphs, page 14)”. Applicant disagrees with the Examiner’s position.

The first paragraph on page 14 of Haggett teaches that models which are based only on the size of the infective population in previous time periods consistently fail to detect the approach of an epidemic. Instead, they provide reasonable estimates of cases reported and *accurately shadow rather than extrapolate the epidemic behavior*. The second paragraph on page 14 of Haggett teaches that models with parameters fixed through time have a tendency to smooth through epidemic highs and lows. Both models depicted in the first two paragraphs on page 14 of Haggett fail to teach or suggest that the spread of the disease are “based on the outbreak history information”. Thus, Haggett fails to teach or suggest, “spread area forecast section further forecasts a time period when the disease will spread in the second area *based on the outbreak history information*” as recited in claim 5.

Claim 6

Claim 6 recites, in part, “a warning section for issuing warning to the medical institution located in the second area forecasted by said spread area forecast section in order to prompt the medical institution located in the second area forecasted by said spread area forecast section to

prepare for the spread of the disease in the future”. The Examiner asserts that Mault allegedly teaches these features. Applicant respectfully disagrees with the Examiner’s position.

Mault teaches a system that could trace the spread of the disease near real-time and that such a system could equip healthcare providers with the necessary information to anticipate, predict, and prepare for emerging healthcare demands. (See paragraph [0041]). The system in Mault, however, requires the healthcare provider to 1) monitor the system to trace the spread of the disease, 2) interpret the data, and 3) prepare vaccines or supplies. Claim 6, however, recites, **“a warning section for issuing warning to the medical institution** located in the second area”. Thus, requiring a healthcare provider to interpret the data presented by the system in order to prepare vaccines or supplies, fails to teach or suggest, “a warning section for issuing warning to the medical institution located in the second area forecasted by said spread area forecast section in order to prompt the medical institution located in the second area forecasted by said spread area forecast section to prepare for the spread of the disease in the future”.

Claims 9, 10, and 11

For the same reasons that claim 1 is patentable over the prior art, claims 9, 10, and 11 are also patentable over the prior art for analogous reasons, as claims 9, 10, and 11 recite similar claim features.

Claims 3, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNair, Mault, Haggett and in view of Aratow et al. (U.S. 7,343,302; hereinafter “Aratow”). Applicant respectfully traverses this rejection.

Claim 3

Claim 3 recites in part, “spread area forecast section forecasts the second area based on frequency of traffic between the first area and the second area”. The Examiner asserts that Aratow teaches “a system that tracks bio-terror threats and their impacts on things such as

volumes at hospitals and emergency departments (disease incidence) using crowd behavior, disease distribution, and traffic flow to predict areas of greatest potential yield (see: column 10, lines 5-20)". Applicant respectfully submits however, that one of ordinary skill in the art at the time of the presently-claimed invention would not have been motivated to combine McNair, Mault, Haggett, and Aratow as suggested by the Examiner because there is no suggestion of motivation for doing so in the references themselves or the knowledge available to one of ordinary skill in the art without resorting to impermissible hindsight. Haggett expressly states that the spreading model of disease within a population is premised on the "population mix[ing] in a random manner". (See page 10, first paragraph). Alternately, Aratow teaches a system which allows end-users to explore what-if scenarios. These scenarios consider variables which are contrary to a population mixing in a random manner. In fact, the variables as taught by Aratow ensure that the population does not mix in a random manner, i.e. "crowd behavior, disease distribution, plume dispersion, etc. Thus, Haggett and Aratow teach fundamentally different considerations of crowd interactions in disease modeling. Accordingly, Haggett and Aratow are inapposite because of the disparity as pointed out above, and the only possible motivation for the Examiner's proposed combination is Applicant's own disclosure, the reliance on which constitutes impermissible hindsight reconstruction under MPEP §2143 (see also *In re Vaeck*, 20 USPQ 1438 (Fed. Cir. 1991)).

Claim 7

For the same reasons that claim 3 is patentable over the prior art, claim 7 is also patentable over the prior art because one of ordinary skill in the art would not have been motivated to combine McNair, Mault, Haggett and Aratow as suggested by the Examiner because there is no suggestion of motivation for doing so in the references themselves or the

knowledge available to one of ordinary skill in the art without resorting to impermissible hindsight.

Claim 8 is rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over McNair, Mault, Haggett, Aratow, and in view of Yamamoto et al. (US 7,197,481; hereinafter "Yamamoto"). Applicant respectfully traverses this rejection.

Claim 8

The Examiner correctly concedes that McNair, Mault, Haggett, Aratow, and Yamamoto fail to teach or suggest a, "medical device indicating section further indicates quantity of the medical devices required by the medical institution for diagnosis and treatment of the disease to the medical institutions based on the incidence rate computed by said incidence rate computing section." However, the Examiner asserts:

Determining a quantity of a product needed to meet demand requirements is an old idea. For example, Yamamoto teaches a system that uses sales information (information indicating a requirement much like an incidence rate of a disease) for determining the quantity of a product to be manufactured. It would have been obvious to one of ordinary skill in the art to include in the patient information storing system of McNair, the use of information to determine the quantity demand of a product as taught by Yamamoto because the claimed invention is merely a combination of old elements, and in the combination, each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

Applicant respectfully disagrees.

By the Examiner's own concession, the cited prior art fails to explicitly teach these features. Applicant respectfully submits that a production system for retail goods which is intended for timely collection of accurate sales information from retail outlets (see Yamamoto, Abstract), bears no correlation at all to an incidence rate of a disease. For the sake of argument, the incidence rate computed by the incidence rate computing section is based on the medical records and the location information of the plurality of patients. The sales information in

Yamamoto, however, is directly taken from retail outlets, and represent product names and the quantity of each product sold. (See col. 7, lines 65-66). Thus, Yamamoto fails to teach or suggest that the sales information could substitute for the “incidence rate” as recited in claim 8.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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